

# **uSD-1216 Adapter Board**

**for AW-NM191-uSD and AW-CM276-uSD**

## **User Guide**

**Rev. E**

(For Standard)

## Revision History

Version	Revision Date	Description	Initials	Approved
A	2020/05/14	<ul style="list-style-type: none"> <li>● Initial Version</li> </ul>	Renton Tao	N.C. Chen
B	2020/05/28	<ul style="list-style-type: none"> <li>● Update VIO and VIO_SD configuration</li> </ul>	Renton Tao	N.C. Chen
C	2020/6/5	<ul style="list-style-type: none"> <li>● Add 3. PCM UART extension</li> <li>● Update 4. EVB Kits Contents</li> </ul>	Renton Tao	N.C. Chen
D	2020/7/20	<ul style="list-style-type: none"> <li>● Add Block Diagram of AW-NM191-uSD</li> </ul>	Renton Tao	N.C. Chen
E	2020/8/17	<ul style="list-style-type: none"> <li>● Update 2.3 Schematics and 2.4 Placement</li> <li>● Update the photo of 2.2 HW introduction</li> <li>● Remove the content of PCM UART extension adapter board in 3. EVB Kits Contents</li> <li>● Add Block Diagram of AW-CM276-uSD</li> </ul>	Renton Tao	N.C. Chen

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# 1. Introduction

Azurewave provides uSD-1216 adapter board with Wi-Fi/BT module solutions for NXP i.MX RT and i.MX6 Evaluation Kits. The uSD-1216 adapter board supports AW-NM191NF (w/ NXP W8801) and AW-CM276NF (w/ NXP W8997) Wi-Fi combo BT module solutions.

- Wi-Fi through uSD interface is for AW-NM191NF and AW-CM276NF
- BT through uSD is only for AW-CM276NF.

Main chip	AzureWave Module	uSD Adaptor Board
NXP W8801	AW-NM191NF	AW-NM191-uSD
NXP W8997	AW-CM276NF	AW-CM276-uSD

## 1.1 Supported I/O to host

- Micro SD (uSD) interface for Wi-Fi or Wi-Fi/BT.
- Arduino headers for Bluetooth through UART interface.
- FFC connector for UART, PCM, and other control signal.
- Embedded UART-to-USB IC as an option for UART.
- Other debug and power interface.

## 1.2 Supported I/O signal level

I/O\ voltage level	1.8V	3.3V
SDIO(3.0/2.0)	V	V
UART	N/A	V

## 1.3 Supported RF standards

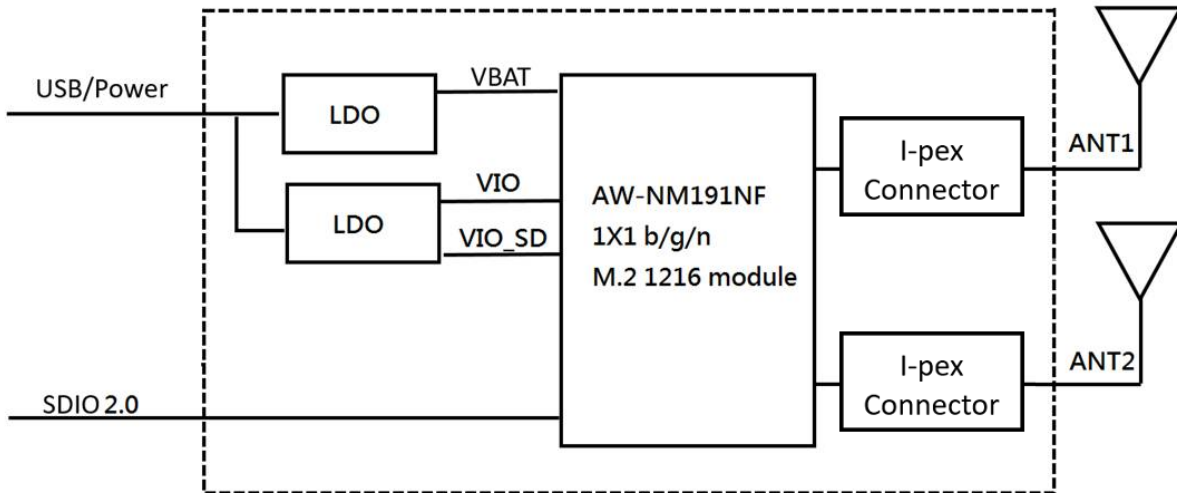
Model \ Standards	Wi-Fi*	BT*
AW-NM191NF	1x1 Wi-Fi 4	N/A
AW-CM276NF	2x2 Wi-Fi 5 (2.4/5GHz)	5.0

\*Connecting with i-pex gen 4 RF connector

## 2. uSD-1216 Adapter Board

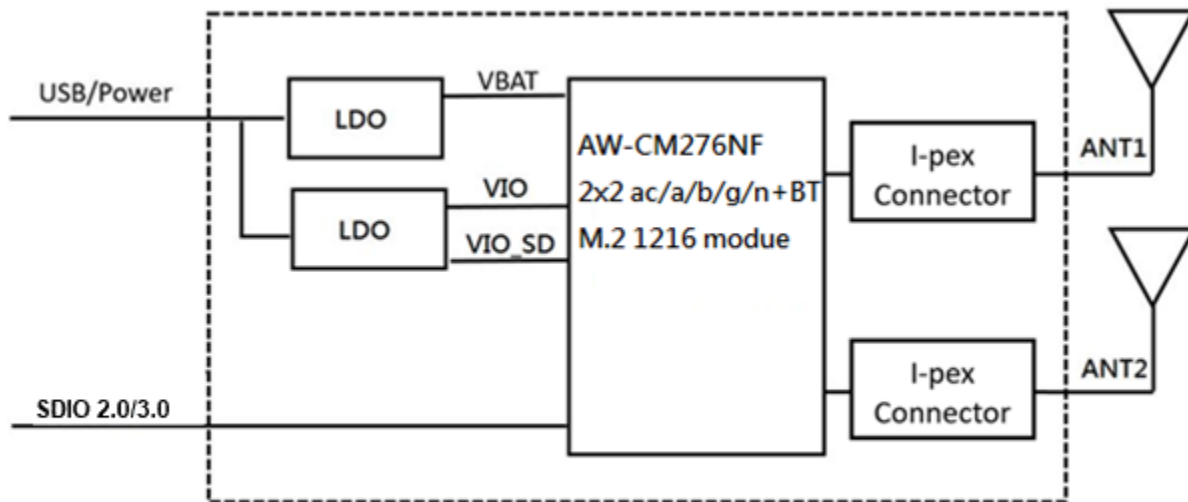
### 2.1 Block Diagram

For AW-NM191-uSD



AW-NM191-uSD Block Diagram

For AW-CM276-uSD



AW-CM276NF-uSD Block diagram

## 2.2 HW Introduction

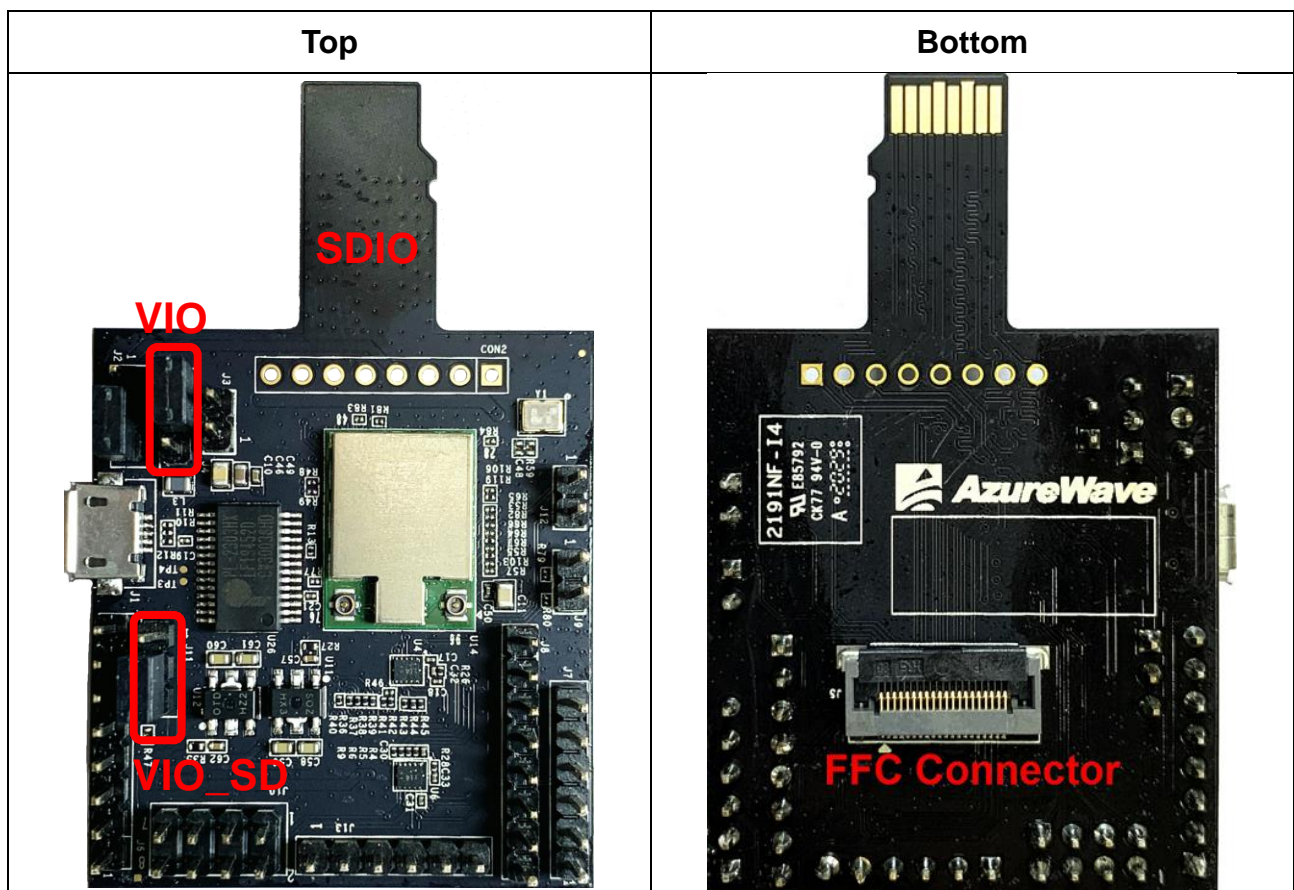
VIO\_SD voltage level options

- For 3.3V supply, please connect J11 (2-3).
- For 1.8V supply, please connect J11 (1-2).

VIO voltage level options

- For 3.3V supply, please connect J4 (2-3).
- For 1.8V supply, please connect J4 (1-2).

UART signal and 3.3V power source is configured from FFC connector at BOT side as default.

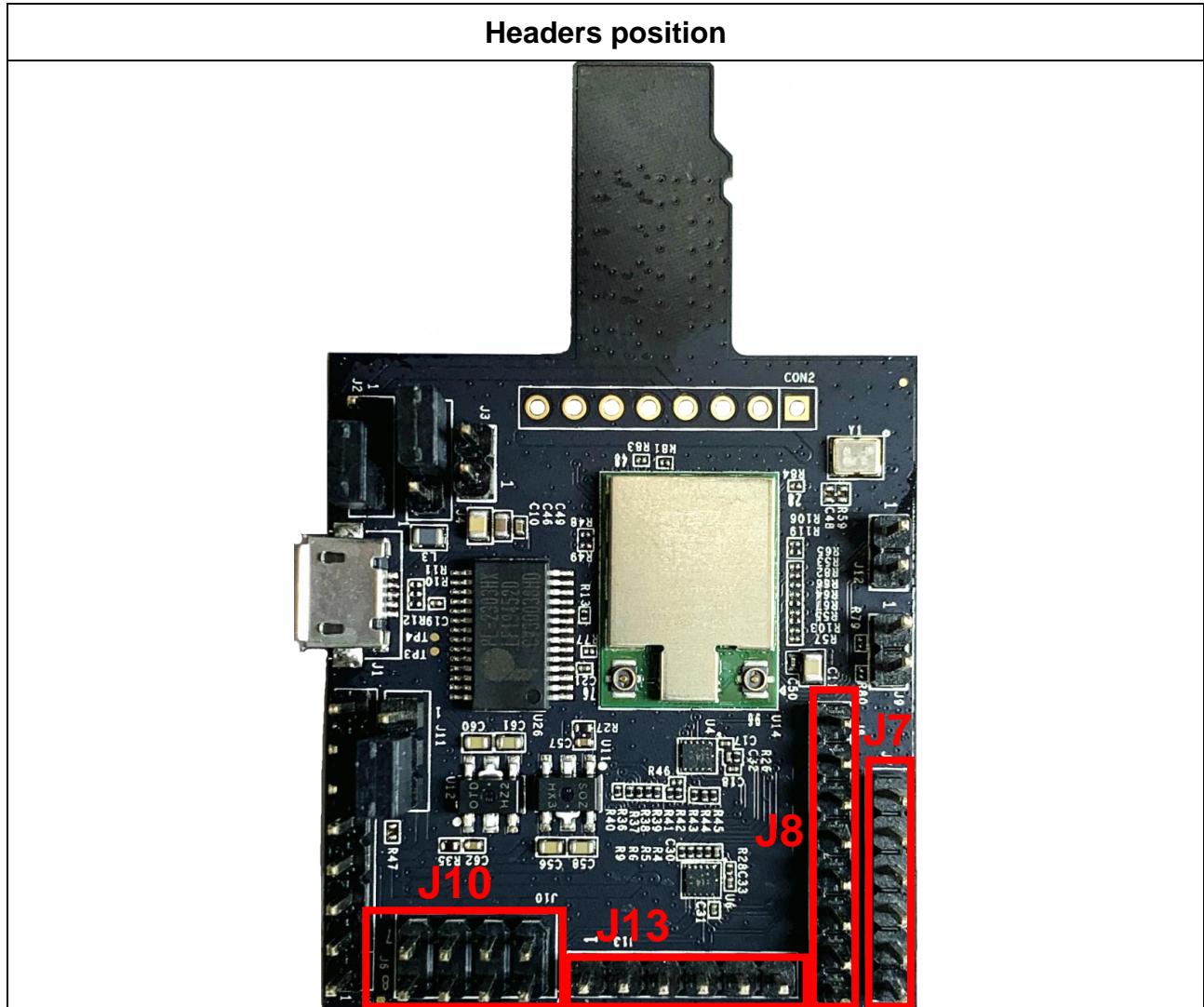


By using headers for Bluetooth through UART interface

- UART\_RTS: J7 (pin 3) or J10 (pin 6)
- UART\_TXD: J8 (pin 1) or J10 (pin 4)
- UART\_CTS: J7 (pin 4) or J10 (pin 8)
- UART\_RXD: J8 (pin 2) or J10 (pin 2)

By using headers for Bluetooth audio through PCM interface

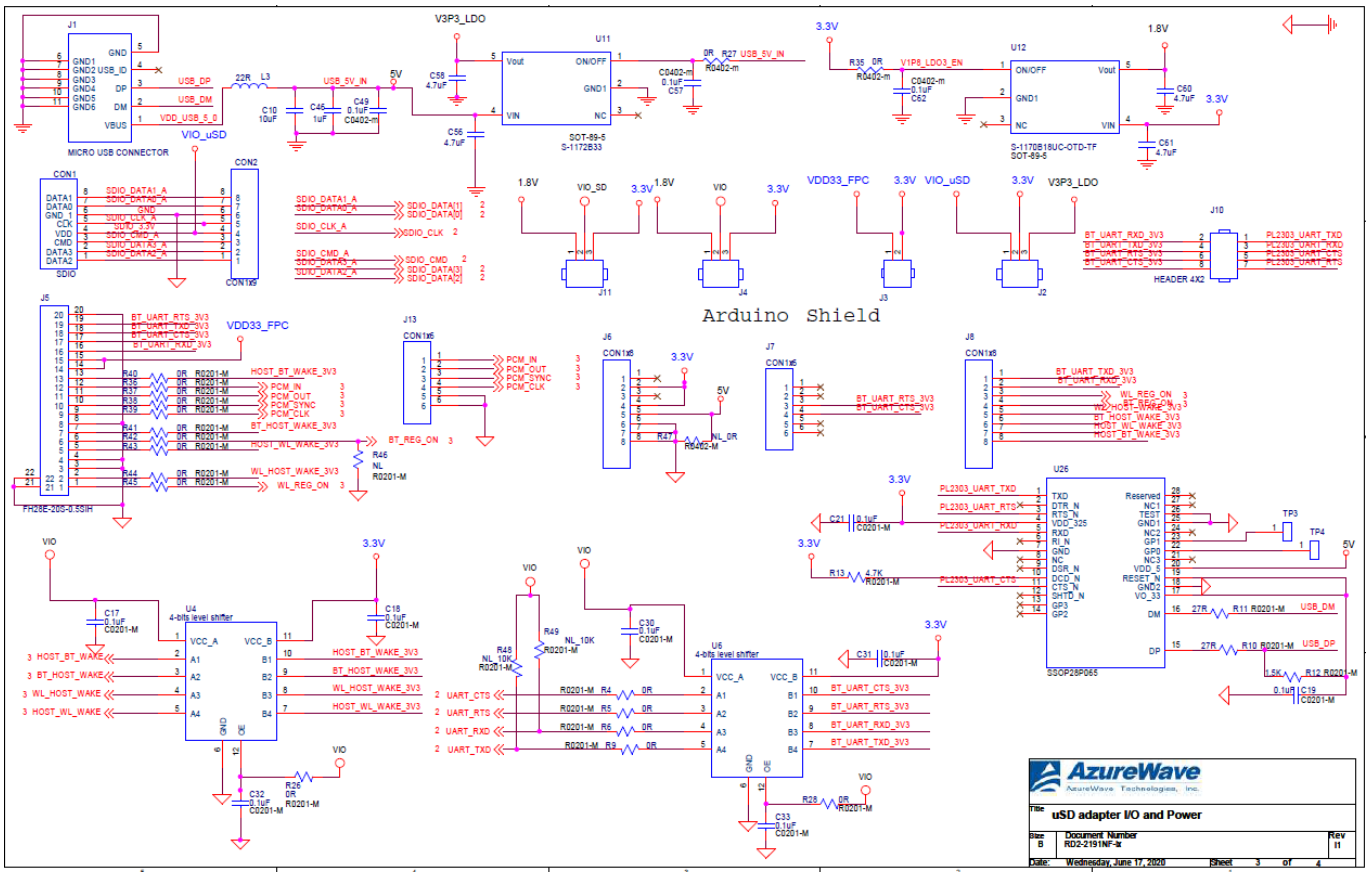
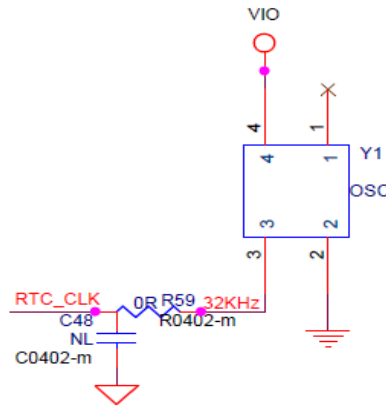
- PCM\_IN: J13 (pin 1)
- PCM\_OUT: J13 (pin 2)
- PCM\_SYNC: J13 (pin 3)
- PCM\_CLK: J13 (pin 4)



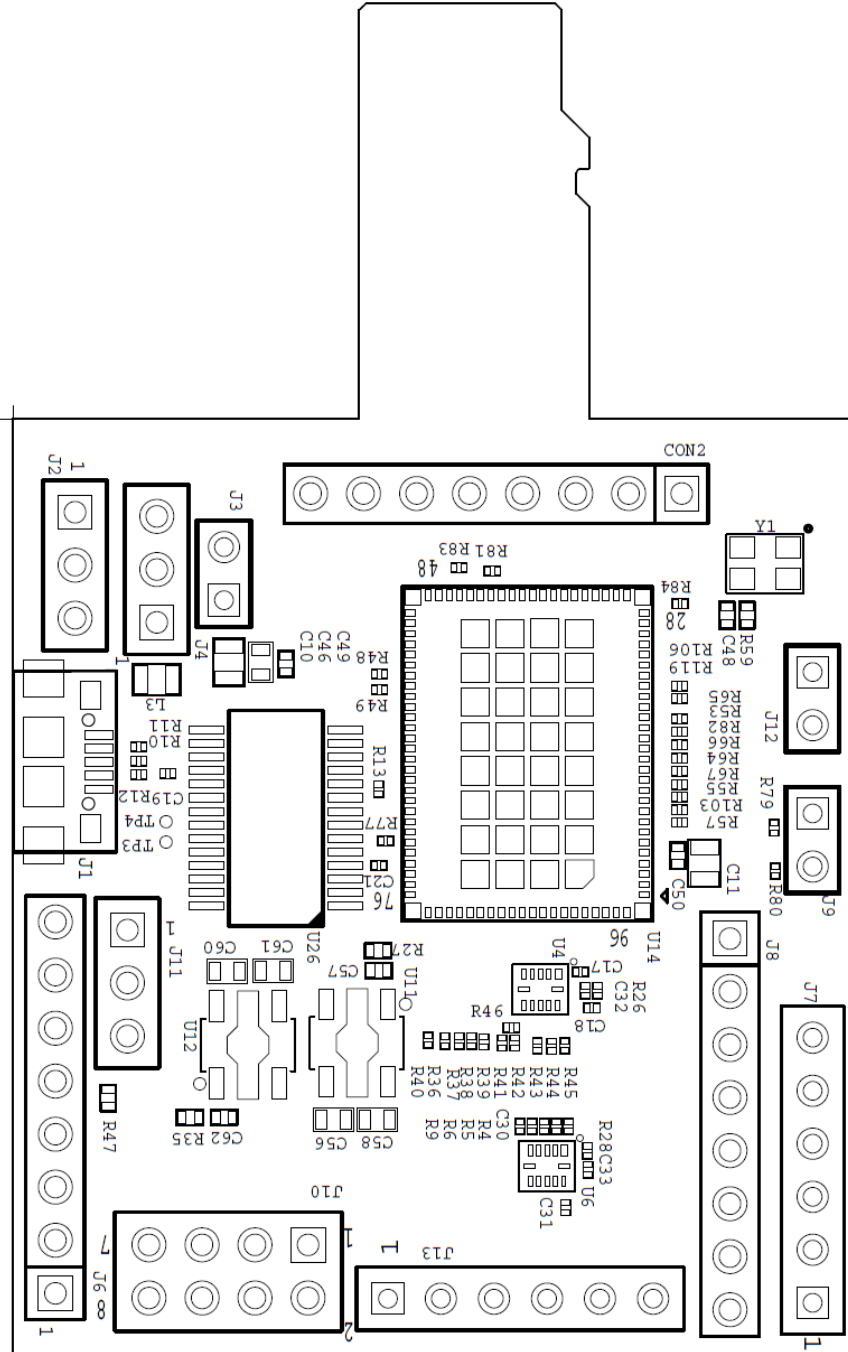




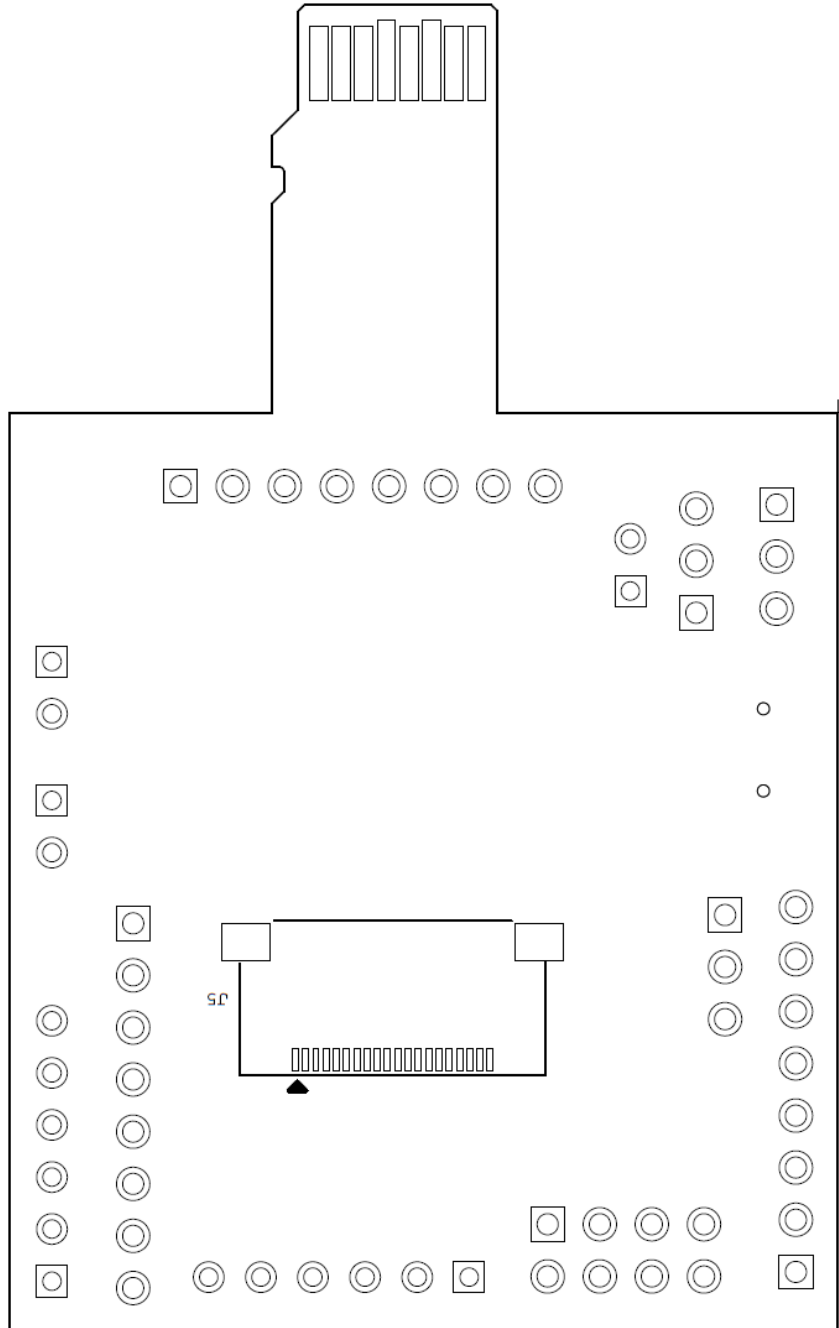




## 2.4 Placement

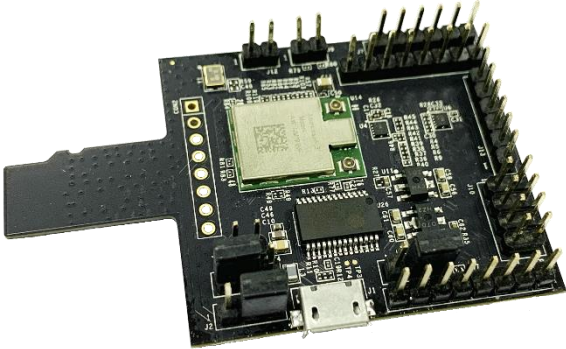

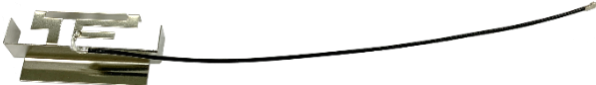


**TOP View**



**BOT View**

### 3. EVB Kits Contents

Content	Description
	<p>AW-NM191-uSD or AW-CM276-uSD</p>
	<p>75mm, 20 contacts, 0.5mm pitch FFC Cable</p>
	<p>PIFA Antenna</p> <ul style="list-style-type: none"> <li>● Radiation: Directional</li> <li>● 3D Peak Gain: <ul style="list-style-type: none"> <li>■ 2.98dBi (2.4~2.5GHz)</li> <li>■ 5.16dBi (4.9~5.9GHz)</li> </ul> </li> <li>● Polarization: Linear Vertical</li> <li>● Connector: IPEX-4 Compatible</li> <li>● Operating Temp: -20°C ~ +65°C</li> <li>● Storage Temp: -30°C ~ +75°C</li> </ul>